

the rejections of claims 1, 4-6, 8, 9, 12, 13, 15, 18, 19, and 21 under 35 USC § 103(a) based on the combination of Scheid and Martin. Claim 11 has been canceled, rendering moot the rejection thereof.

Referring initially to the drawing, the Applicant respectfully traverses the Examiner's request that FIGS. 2-4 be designated by a legend such as "Prior Art." The cited section 608.02(g) of the MPEP states that figures ***showing the prior art*** may be retained if designated by a legend such as "Prior Art." However, the Applicant respectfully submits that FIGS. 2-4 of the application do not show the prior art and thus need not be modified by a legend such as "Prior Art" as suggested by MPEP § 608.02(g).

In particular, FIGS. 2-4 represent computer simulations related to certain aspects of conventional drop hammer and diesel hammer systems but do not contain illustrations or depictions of conventional drop hammer and diesel hammer systems. To the contrary, the Applicant respectfully contends that the computer simulations depicted in FIGS. 2-4 and/or the significance of what is shown in these simulations was not necessarily known or recognized prior to the Applicant's conception of the present invention.

Further, FIGS. 2-4 contain legends and/or reference characters identifying certain characteristics of the computer simulations that the Applicant also does not admit were known or recognized prior to the Applicant's conception of the present invention. These legends and/or reference characters identify characteristics that the Applicant has disclosed simply to satisfy the best mode requirements of 35 USC § 112, first paragraph. In this respect, the simulations of FIGS. 2-4 may be helpful, although not necessary to one of ordinary skill in the art when making and using a system according to the principles of the present invention.

The Applicant thus respectfully traverses the Examiner's request that FIGS. 2-4 be labeled with a legend such as "Prior Art."

The Examiner also objected to the drawing under 37 CFR 1.83(a) as not showing every feature of the invention specified in the claims. In particular, the Examiner suggested that the clamp assembly referred to in claims 11, 12, and 21 was not shown in the drawing. Claim 11 has been canceled by this amendment. With

respect to claims 12 and 21, however, the Applicant respectfully submits that support for the clamp assembly recited therein can be found in the specification and is identified in the drawings by reference character 36. The Applicant thus respectfully submits that the drawings as presented provide support for claims 12 and 21 and requests withdrawal of the objection to the drawing under 37 CFR 1.83(a).

With respect to the rejection of claims 4-6 and 9 under 35 USC § 112, second paragraph, the Applicant respectfully submits that any fluid, including ambient air, is substantially prevented from flowing through the vent port when the ram member is below the preload position. The use of the term "fluid" was not intended to broaden the scope of the term "ambient air" as introduced in claim 1 but was instead used to identify the characteristics of the system when the ram member is below the preload position.

However, in order to expedite prosecution of the present application, the Applicant has replaced the term "fluid" in claim 4 with the term "ambient air." In this context, the Applicant represents that the language of the claims does not require that the preload portion of the housing chamber contain only ambient air. For example, other fluids, such as lubricants, may be disposed with the housing chamber.

In any event, the Applicant respectfully submits that the amendment to claim 4 renders moot the rejection of claims 4-6 and 9 under 35 USC § 112.

Turning now to the rejection of claims 1, 4-6, 8, 9, 12, 13, 15, 18, 19, and 21 under 35 USC § 103(a), the Applicant respectfully traverses this rejection. In particular, the Applicant respectfully submits that, absent the Applicant's own disclosure, nothing in the record would motivate one of ordinary skill in the art to combine a diesel hammer as taught by the Scheid reference with a drop hammer as taught by the Martin reference. Further, the Applicant respectfully submits that, even such a combination were attempted, nothing in either the Scheid reference or the Martin reference discloses, teaches, or suggests the present invention as recited in claims 1, 13, and 18.

A drop hammer uses gravity to cause a ram member to impact and drive a member into the earth. After each impact, the drop hammer must be raised and released by a lifting assembly to allow gravity to drop the ram member for the next impact. The ram member of a conventional drop hammer is not contained in a closed housing during the process of raising and dropping the ram member. To the contrary, if

a ram member is disposed within a closed housing, the housing could substantially interfere with the up and down movement of the drop hammer if not carefully designed. In particular, compressed fluids below the ram member could interfere with the impact on the member being driven, while compressed fluids above the ram member could interfere with the raising of the ram member. A conventional drop hammer thus uses only enough structure to guide the ram member for movement between upper and lower positions and does not employ a sealed housing that might interfere with movement of the ram member.

The Martin reference depicts and describes an entirely conventional drop hammer in that the ram member is supported for movement by rails and is not disposed within a closed housing. The rails allow free airflow around the ram member as it is lifted and dropped. The Applicant respectfully submits that one of ordinary skill in the art would in no way read the Martin reference as suggesting that the ram member be enclosed within a housing.

A diesel hammer, on the other hand, does not rely on direct engagement of the ram member with the member being driven to apply a driving force to the member. A diesel hammer provides a closed housing in which a fuel mixture is compressed to the point of ignition. The ignition of the fuel mixture creates a driving force that is applied to the driven member and also raises the ram member for the next cycle.

The Scheid reference depicts and describes an entirely conventional diesel hammer to the extent that a fuel mixture below a ram member is compressed and ignited. The Scheid reference clearly could not use a lifting means arranged above the ram member because of the relatively uncontrolled upward movement of the ram member caused by ignition of the fuel mixture. The Applicant thus respectfully submits that one of ordinary skill in the art would not be motivated to combine a sealed chamber as taught by the Scheid reference with a drop hammer as disclosed in the Martin reference.

Given the foregoing, the Applicant respectfully submits that one of ordinary skill in the art would not look to one of the Scheid and Martin references to modify the teachings of the other reference. In particular, the diesel hammer and drop hammer technologies are so different and potentially incompatible that one of ordinary skill in the

art would not be motivated to combine the Scheid and Martin references as suggested by the Examiner. Further, the Applicant respectfully submits that nothing in the November 17 Office Action explains where the Examiner found such motivation.

To the contrary, the Applicant respectfully submits that the Examiner used impermissible hindsight gained by reading the Applicant's own disclosure when combining the Scheid and Martin references as described in the November 17 Office Action.

The Applicant respectfully submits that the Scheid and Martin references are not properly combinable under 35 USC § 103(a) and requests withdrawal of any claim rejections based on this combination.

Even if the Scheid and Martin references are properly combinable, however, the Applicant respectfully submits that this combination does not disclose, teach, or suggest the invention claimed in the present application. As discussed above, the arrangement of a drop hammer within a closed housing can significantly interfere with movement of the drop hammer to the point where the effectiveness of the drop hammer is significantly compromised.

Claim 1 specifies that the preload position is determined such that a preload force is applied to the helmet member but that the ram member impacts the helmet member to drive the pile. Claim 13 specifies that ambient air within the preload chamber portion of the housing chamber compresses as the ram member moves from the preload position to the lower position to apply a preload force on the helmet member prior to impact of the ram member on the helmet member. Claim 18 specifies that when the ram member falls below the preload position, ambient air within a preload chamber portion of the housing chamber below the vent port compresses as the ram member moves into the lower position to apply a preload force on the helmet member.

The Applicant respectfully submits that one of ordinary skill in the art would not read the Scheid and Martin references, alone or in combination, to disclose the particular arrangement of the vent port relative to the upper lower positions such that, as the ram member moves from the upper to the lower position, the ram member compresses air to create the preload force and subsequent impact recited in claims 1, 13, and 18. For this additional reason, the Applicant thus respectfully requests

withdrawal of the rejections of claims 1, 13, and 18 under 35 USC § 103(a) based on the combination of the Scheid and Martin references.

The Applicant has taken this opportunity to amend claims 1, 13, and 18 to clarify the nature of the lifting assembly recited therein. As previously presented, the language of claims 1, 13, and 18 suggested that the lifting assembly mechanically engaged the ram member. Although this connection is typically mechanical, other connections may be used. For example, the Martin reference discloses a magnetic connection scheme that could be used by the claimed lifting assembly. The amendments to claims 1, 13, and 18 thus clarify that any lift assembly that is at least partly disposed within the housing chamber above the ram member can be used to lift the ram member during each cycle.

Submitted herewith is a document (entitled Exhibit A - Listing of All Claims and Amendments (04-06-2006)) containing a listing of the claims as currently presented. The attached Listing contains the text of each pending claim, along with any amendments made hereby (illustrated using strikethrough and underlining) and the status of each pending claim.

If there is any matter which could be expedited by consultation with the Applicant's attorney, such would be welcome. The Applicant's attorney can normally be reached at the telephone number below.

Signed at Bellingham, County of Whatcom, State of Washington this 6th day of April, 2006.

Respectfully submitted,

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CERTIFICATE OF MAILING
37 C.F.R. §1.8

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